

Workshop

Advanced Embedded Systems Development

The 5-days power workshop „Expert- Advanced embedded systems” offers a comprehensive application building workshop on “embedded systems development” or “embedded μ C for software engineers”. In addition to the innovation of PowerPC architecture and MicroBlaze architecture the relevant methods and peripherals allows complex individual processor solution to realize in FPGA. Each module consists of practical exercises on board or by intensified simulation so that the participant can acquire the theoretical as well as practical knowledge and able to implement this knowledge in real projects.

The workshop language is German.

Applicable technologies

The Spartan FPGAs and Virtex families

Requirements

Knowledge of the XILINX EDK tools, Architectures knowledge of XILINX FPGA and of VHDL and programming C.

Duration and Cost

Duration: 3 days

Cost: € 1.800, – net per person, including detailed training material, drinks in the breaks and lunch.

Agenda

Day 1

Review EDK

- Review Features and Toolflow
- Multi Processors Projects
- Make File Generation

Interrupt Systems

- MicroBlaze and PowerPC Details
- Interrupt Controllers
- Interrupt Handlers and Initialization

Memory Controllers

- IP Cores of Memory Controllers
- Configuration of DDRAM Memory Controller
- File Systems: SysACE, MFS

Day 2

Co-Debugging of Hardware and Software

- Synchronizing Debugger and Chipscope

User Peripherals

- Details of OCM Bus
- Usage for Peripherals

Simulation

- Bus Functional Model Simulation

Board Support Packages

- Third Party OS
- Generating the BSP
- XMK: XILINX Micro Kernel

Day 3

Profiling

- Analyzing Software Performance

Improving performance

- Caching
- Moving Software to Hardware
- Creating Co-processors (APU, FSL)

Bootloader Initialization

- Applications for External Memory
- Flash Programming